'LVANIA DEPARTMENT OF AGRICULTURE
Bureau of Plant Industry
Circular No. 95 Harrisburg February, 1929

Black Knot in Plums and Cherries

Unsightly swollen growths on limbs and twigs of plum and cherry trees have long been known by the name of "black knot." This disease is due to a fungus *(Plowrightia morbosa)* which after it has obtained entry into the bark sets up an intense irritation and stimulates the tissue of the limb to abnormal growth, thus producing the swollen knot. In the swollen tissues the fungus remains alive from year to year and each summer the stimulation continues so that the knot soon enlarges in size and spreads up and down the limb.

In early stages when the knot is still small and confined to one side of the limb it may not appear to do much harm. As it becomes larger and encircles the limb the water or sap supply is interfered with, for the sap passes with difficulty through the imperfect distorted tissue of the knot. Sooner or later the branch above the knot dies out because of this girdling effect and if the knots are numerous the whole tree eventually perishes.

The black knot disease is spread from limb to limb or from tree to tree. The fungus in the knot produces two series of spores annually, one in the spring months and the other in fall or winter. The spores are readily carried by the wind and if they are deposited on another tree so that the spores may germinate in some wound or crack the fungus may penetrate the bark and start another knot. Hence the importance of avoiding bark injuries in pruning or picking.

Black knot is confined to sweet and sour cherries, wild cherries, wild plums and the various varieties of cultivated plums. The Japanese plums often suffer considerably. The disease does not occur on any other tree.

Fortunately the control of black knot is easy if taken in time. When a tree becomes badly infested with knots it is difficult to bring it back to a healthy condition, especially if the knots occur on most of the larger branches. But if the knots are relatively few and affect only smaller branches, the tree can readily be saved. The whole object in control is to take off and destroy the knots before the formation of spores which will spread the fungus to new limbs or trees. Theoretically this should be done twice a year, in May before the spring spores appear and again in October before the fall spores are ready to shed. In cases where knot is plentiful these two removals may be necessary, though in ordinary cases cutting out all knots at pruning time seems to hold the disease well in check.

In cutting out the knots, the whole limb should be removed by a cut well below the knot. All attempts to save limbs by cutting out

the swollen tissue have been proved by years of sad experience to be useless. The same may be said of efforts to treat the knots with tars, oils, paints or other materials. None of these has ever shown enough value to be worth consideration and we are forced to conclude that cutting off the knot and limb together is the only dependable practice.

When cut off, the knots should be burned. Under certain conditions the knots will go on producing spores on the brush pile on the ground or in the fence corner just as they would on the tree. Hence it is important to destroy them entirely and promptly, fire being the simplest and easiest means for the purpose.

Another factor which is sometimes important in black knot control is the presence of knot in neighboring wild or cultivated trees. Obviously it is not wisdom to try to control the disease on certain trees while possible sources of infection are allowed to remain in the vicinity. The safe course is to get rid of all the black knot wherever it occurs.

Where systematic and thorough removal and burning have been carried out black knot has not been troublesome. It should be a nuisance, if anywhere, in large plum and cherry orchards. The best proof of the success of the method of control here given is that these large fruit growers who use no other method look on black knot as a very minor disease.